

IN THE ABSTRACT

A method of synthesizing electronic components incorporating nanoscale filamentary structures in which method a metallic catalyst (7) is deposited in a nanoporous membrane (3), the catalyst being adapted to penetrate in at least some of the pores (8) of the nanoporous membrane (3), and filamentary structures are grown on the catalyst in at least some of the pores (8) in the nanoporous membrane (3). The nanoporous membrane (3) is prepared in a manner suitable for ensuring that the wall of the pores (8) include a single-crystal zone, and at least part of the catalyst (7) is grown epitaxially on said single-crystal zone.